

L 9727-66

ACC NR. AP5026190

creation and maintenance of stable partial production units which assure smooth operation of the entire enterprise at all stages of production. A chart is given showing the flow of information. The system incorporates electronic computers for calculations required to keep the operation running smoothly. The various functions of the computer in the system are briefly described. Orig. art. has: 2 figures.

SUB CODE: 09, 13 / SUBM DATE: None /

PEREL'MAN A.A.

PL 02/1170

USSR/Medicine - Dementia Praecox
Medicine - Literature, Medical

Sep/Oct 48

"Special Features of Wartime Schizophrenia," Prof
A. A. Perel'man, Chair of Psychiatry, Tomsk Med
Inst imeni V. M. Molotov, 2 pp

"Nevropatol i Psikhiat" Vol XVII, No 5

Conclusions are based on study of 250 cases.
Submitted 23 Mar 48.

23/49781

116

FERELMAN, Aleksandr Avgustovich

Psychiatry

DECEASED 1960

SO: Zhur. Nevr. i Psikh., 61, No 4, 630, UNCL.

PEREL'MAN, A.A. (Tomsk); MOLOKHOV, A.N. (Kishinev); IVANOV, N.V. (Gor'kiy);
KUTANIN, M.P. (Saratov); EPSHTEYN, A.L. (Dnepropetrovsk); CHALISOV,
M.A. (Minsk); SEMENOV, S.F. (Moskva); SLUCHEVSKIY, I.F.

Discussion. Probl.sud.psikh. 9:162-173 '61.
(MENTAL ILLNESS)

(MIRA 15:2)

PEREL'MAN, A.A. (TomsK); FREYEROV, O.Ye. (Moskva); SHPAK, V.M. (Kalinin);
TORUBAROV, S.V. (Moskva); DETENGOF, F.F.

Discussion. Probl.sud.psikh. 9:230-235 '61. (MIRA 15:2)
(NEUROSES) (MENTAL ILLNESS) (INSANE, CRIMINAL AND DANGEROUS)

TAGEYEVA, Nadezhda Viktorovna; TIKHOMIROVA, Mariya Matveyevna;
PEREL'MAN, A.I., doktor geol.-miner. nauk, otv. red.;
FILIPPOVA, B.S., red. izd-va; DOROKHINA, I.N., tekhn. red.

[Geochemistry of the bottom sediments in the Black Sea (north-
western part)]Gidrogeokhimiia donnykh osadkov Chernogo moria
(severo-zapadnaya chast'). Moskva, Izd-vo Akad. nauk SSSR,
1962. 145 p. (MIRA 16:1)

(Black Sea--Deep-sea deposits)
(Geochemistry)

Alizarin. M. A. Hlinka and A. J. Porelman. Russ. 42,644, April 30, 1935. Alizarin is prepd. by introducing 95 kg. anthraquinone into a ball mill and adding in 3 batches (180 l.) a soln. of 296 kg. NaOH in 600 l. H_2O . The alk. anthraquinone paste is agitated for 40 min. and washed into an autoclave, the NaOH soln. is added and a soln. of 87 kg. Na_2S in 190 l. H_2O free of suspensions. Finally 203 l. of a 40% soln. of $\text{Ca}(\text{NH}_3)_2$ is introduced into the autoclave, and the mass heated to 210° at 16-18 atm. for 3 hrs. The temp. is raised to $220-25^\circ$ and the pressure maintained at 25-6 atm. for 12 hrs. The contents of the autoclave are cooled to 100° , discharged and heated in a tank to $50-60^\circ$ and finally filtered. The Ca lake is washed with water and converted into alizarin by means of HCl .

ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

<p>CA</p> <p>An attempt to apply the methods of thermochemistry in the study of soils. A. I. Perelman. <i>Pedology</i> (U.S.S.R.) 1947, 287-92.—Chernozem soil samples were said with Li, Na, K, Ca, Mg, and Ba, and the heat of reaction evolved when these soils were in contact with 0.05 N HCl was measured by standard calorimetric methods. For Li the heat effect was equal to 0.60 cal. per g. of dry soil, for Na 0.97, for K 0.71, for Mg 1.11, for Ca 1.20, and for Ba 0.81. It is suggested that the heat effect depends on various factors and cannot be reduced to the factor of the exchange of bases and the H of the soil. The theoretical phases of the reactions involved are discussed.</p> <p>J. S. Joffe</p>	
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>	

PEREL'MAN, A. I.

"Fossil and Relict Soils of the Central Asia Deserts,"

Dok. Ak., 69, No. 6, 1949.

Mineralogical Research

CPA

Lime concretions of Karakum and Kyzylkum. A. Perelman. *Doklady Akad. Nauk S.S.S.R.* 78, 1001-4 (1951).—Uncovered relict soils of the desert areas of Central Asia show lime concretions. In some areas a layer of these is encountered. In places these deposits are at a depth of 50 cm. below the surface and in others they are on the surface, or slightly below the surface. Often one can find below the limestone a layer contg. 40-60% gypsum. The compn. of the concretions is: 81.9% CaCO_3 (49.96% CaO); 1.0% MgO ; 6.48% SiO_2 ; 2.3% gypsum. In 10% HCl 99% of the CaO goes in soln.; 100% MgO ; 73% SiO_2 . There is very little sol. SiO_2 or Al_2O_3 in 5% KOH . Ground sections examd. under the microscope show that SiO_2 is not the cementing agent as postulated by some. It is the calcite that causes the cementation. The accumulation of CaCO_3 and CaSO_4 is attributed to upward movement of salts from a relatively high water table at one time or another.

I. S. Ioffe

PEREL'MAN, A. I.

USSR/Geophysics - Obituary

May/Jun 52

"Boris Borisovich Polynov (1877-1952)," Obituary by
A.A. Saukov and A.I. Perel'man

"Iz Ak Nauk, Ser Geolog" No 3, pp 3-5

In his 75th year, Boris Borisovich Polynov, outstanding scientist, and academician-Communist died on 16 Mar 52. He was distinguished by his classical research in agriculture, geochemistry and geography.

220756

PEREL'MAN, A.I.

Geochemistry

Determinative chemical elements of the landscape, Priroda 41 No. 4, 1952

Monthly List of Russian Accessions, Library of Congress, July 1952. UNCLASSIFIED.

PEREL'MAN, A.I.

GEOCHEMISTRY

"Geochemistry." A.S. Saukov. Reviewed by A.I. Perel'man. Priroda 41 no. 8, 1952

also in Pribluzhdenie No. 2, 1952

*Land Sed. Men. Sci. 1952, AN/Sci Ser. #5,
Soviet Geol. Sci., AS USSR, 51, 1952, p. 152*

9. Monthly List of Russian Accessions, Library of Congress, November 1952 ~~1953~~, Uncl.

PEREL'MAN, A.I., kandidat *geologo-mineralogicheskikh nauk*.

~~Structure of the atom and the composition of the earth's crust. Nauka i~~
zhizn' 20 no.9:26 S '53. (MLRA 6:11)

(Geochemistry)

PEREL'MAN, A.I.

Forms of surface erosion and their distribution. Vop.geog. vol.33:
109-151 '53. (MLBA 7:3)
(Physical geography)

USSR/Geology - Geochemistry

Card 1/1 Pub. 86 - 4/40

Authors : Perelman, A. I.

Title : Natural landscapes of the European part of USSR and their geochemical characteristics

Periodical : Priroda 3, 35-47, Mar 1954

Abstract : The new B. B. Polynov method for the study of the geochemical characteristics of natural landscapes, is described. The migration of chemical elements reflects many typical characteristics of a landscape as a whole. Natural landscapes are usually characterized by definite conditions of the migration of chemical elements - a special type of migration -. The role of water (ground, river waters), on the geochemistry of a natural landscape, is explained. Chart showing the geochemical landscapes of the European USSR, is included. Ten USSR references (1931-1952). Tables; diagram, drawings; illustrations.

Institution :

Submitted :

PERELMAN, A

"Structure of an atom and composition of the earth's crust. Tr. from the Russian" (p. 9)

"Konstantin Ivanovich Scriabin; a profile" (p. 11)

PRIRODA I ZNANIE

(Bulgarsko prirodoizpitatelno druzhestvo) Sofiya Vol 7 No 1 Jan 1954

SO: East European Accessions List Vol 2 No 7 Aug 1954

PEREL'MAN, A.I.

Geochemical conditions for the formation of red formations.

Dokl.AN SSSR 94 no.2:297-300 Ja '54.

(MIRA 7:1)

1. Institut geologicheskikh nauk Akademii nauk SSSR.
(Geochemistry) (Soils, Red)

PEREL'MAN, ALEKSANDR IL'ICH.

N/5
623.2
.P4

Ocherki geokhimii landshafta / Essays on the geochemistry of the landscape /

Pod Red. D. I. Shcherbakov. Moskva, Geografiz, 1955. 391 P. Diagr., Maps, Tables

PEREL'MAN, A.I.

USSR/ Geology--Organic material

Card 1/1

Pub. 86--1/39

Authors :

Perel'man, A. I., Dr. Geol. Mineral Sc.

Title :

~~was not published~~
The geological role of organisms

Periodical :

Priroda 44/1, 3--9, Jan 1955

Abstract :

In commemorating the tenth anniversary of the death of Vladimir Ivanovich Vernadskiy some of his views on geology are recalled, such as that living substance is the most powerful geological force of the biosphere and it increases with the passing of time. This view is found to be in harmony with the fact revealed by research that geological formations like coal, turf, limestone reefs and diatomite represent the remains of vegetable and animal matter and that entire islands are formed by coral action. According to Vernadskiy's theory there is a cycle of interaction between organic and inorganic matter. Nine USSR references (1932--1953). Illustration.

Institution :

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Submitted :

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PERELMAN A.I.

PERELMAN, A.I.

Migration series of chemical elements in the weathering zone. Dokl.
AN SSSR 103 no.4:669-672 Ag'55. (MLRA 8:11)

1. Institut geologicheskikh nauk Akademii nauk SSSR. Predstavleno
akademikom D.I.Shcherbakovym
(Geochemistry)

PEREL'MAN, A.I.

Archaic weathering crust of Central Asia. Dokl. AN SSSR 103 no.5:
867-869 Ag '55. (MLRA 9:1)

1. Institut geologicheskikh nauk Akademii nauk SSSR. Predstavleno
akademikom D.I. Shcherbakovym.
(Soviet Central Asia--Weathering)

PEREL'MAN, Aleksandr Il'ich; MARCOLIN, Ya.A., redaktor; GLEYER, D.A.,
tekhnicheskii redaktor

[History of atoms and geography] Istoriiia atomov i geografiia.
Moskva, Gos. izd-vo geogr. lit-ry, 1956. 60 p. (MLRA 10:2)
(Atoms) (Geography)

Perelman, A. I.
Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 2,
p 3 (USSR) 15-57-2-1206

AUTHOR: A. I. Perelman

TITLE: Significance of the Work of Academician B. B. Polynov
in Geology and Geochemistry (Znachenie trudov akademika
B. B. Polynova dlya geologii and geokhimi)

PERIODICAL: V sb: Kora Vyvetrivaniya. Nr 2, Moscow, AN SSSR, 1956,
pp 5-27

ABSTRACT: B. B. Polynov was one of the most outstanding
representatives of the pre-Kuchayev school of scien-
tists. The sphere of his scientific interests was
unusually large and included various (usually related)
phases of soil science, geography, geology and geo-
chemistry. He originated the study of erosional crust
and introduced new concepts into the subject of the
decomposition of rocks and minerals. He established
the new idea of the "migrational ability" of chemical
elements in the earth's crust, determined five

Card 1/4

15-57-2-1206

Significance of the Work of Academician B. B. Polynov (Cont.)

migrational series of elements, and introduced the concept of sequence in the process of decomposition. Thus, in the development of orthoeluvium, that is, of the residuum of the decomposed extrusive rocks, he separated four stages: the stage of a coarsely fragmental orthoeluvium; the stage of calcined orthoeluvium; the stage of sialic orthoeluvium; and the stage of allitic orthoeluvium. Analogous stages of development can be seen in the residuum of the decomposed marine sediments ("paraeluvium") and of the continental deposits ("neoeluvium"). According to his views, the eluvial crust of decomposition is associated with definite forms of the cumulative crust of decomposition; the latter is commonly enriched with mobile products of decomposition (carbonates, sulfates, chlorides). Forms, phases and types of the eluvial and the cumulative crusts of decomposition depend on the elements of geomorphology. As the actual foundations for his theory, B. B. Polynov used, to a great degree, his personal field observations in Mongolia, in the trans-Volga district and in the Caspian Lowland, and

Card 2/4

PERELMAN, A.I.

USSR/Cosmochemistry - Geochemistry. Hydrochemistry.

D

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 746

Author: Perel'man, A.I.

Institution: Academy of Sciences USSR

Title: Mobility of the Chemical Elements in the Weathering Zone

Original

Periodical: Sb.: Kora vyvetrivniya, No 2, Moscow, Academy of Sciences USSR, 1956, 92-100

Abstract: A formula is proposed for the calculation of the mobility of the chemical elements in the weathering zone: $P_X = P_Y \times m_X n_Y / m_Y n_X$, where P_X and P_Y are the mobilities of elements X and Y, m_X and m_Y are the average concentrations of X and Y in the fluvial waters, and n_X and n_Y are the average concentrations of the respective elements in the rocks of the given district which are affected by the weathering process and drained by the feed waters of the particular river. The author notes that mobility depends on: (1) the properties of the element (position in the periodic table, ionic radius, valency,

Cars 1/2

USSR/Cosmochemistry. Geochemistry. Hydrochemistry

D

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 746

Abstract: optical properties, etc), (2) the mineral composition of the rocks and the type of crystal lattice of which the element is a part and its susceptibility to weathering, and (3) the action of organisms and natural waters. See also Referat Zhur - Khimiya, 1956, 12667.

Card 2/2

1572 01-114 11. 11. 11.
KRASNIKOV, V.I., glavnyy red.; BRODSKIY, A.A., red.; PEREL'MAN, A.I., red.;
SAUKOV, A.A., red.; SAFRONOV, N.I., red.; SERGEYEV, Ye.A., red.;
KHITAROV, N.I., red.; SHARKOV, Yu.V., red. SHCHERBINA, V.V., red.;
GUROVA, O.A., tekhn.red.

[Geokhimicheskie poiski rudnykh mestorozhdenii v SSSR; trudy soveshchaniia. Pod red. V.I.Krasnkova. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane neдр, 1957. 466 p. (MIRA 11:3)]

1. Vsesoyuznoye soveshchaniye po geokhimicheskim metodam poiskov rudnykh mestorozhdeniy. Ist, Moscow, 1956.
(Geochemical prospecting)

PEREL'MAN, A.I., doktor geolog-mineralogicheskikh nauk.

Geochemistry of the weathering crust. Priroda 46 no.6:9-18 Je '57
(MLRA 10:7)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii
i geokhimii Akademii nauk SSSR (Moskva).
(Geochemistry) (Earth--Surface)

PEREL'MAN, A.I., doktor geologo-mineralogicheskikh nauk, (Moskva)

"Mineralogical travels" by A.E. Fersman. Reviewed by A.I. Perel'man.
Priroda 46 no.7:117-119 J1 '57. (S 2A 10:8)

(Mineralogy--Juvenile literature)
(Fersman, A.E.)

SAUKOV, A.A.; ~~PEREL'MAN~~, A.I.

Geochemical methods used in the search for deposits of mineral
resources. Zap. Vses. min. ob-va 86 no.2:267-280 '57. (MLBA 10:6)
(Geochemical prospecting) (Mineralogical chemistry)

RUMANIA/Cosmochemistry. Geochemistry. Hydrochemistry.

D

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81052.

Author : Saukov A., Perelman A.

Inst :

Title : Geochemical Methods of Prospecting Minerals.

Orig Pub: An. Rom.-sov. ser. geol.-geogr. 1958, No 2, 27-41.

Abstract: No abstract. For the translation refer to Ref. Zhur-Khimiya, 1958, 7428.

Card : 1/1

PEREL'MAN, A.I., doktor geol.-mineral. nauk

Penetrating into the secrets of the earth's core. Nauka i zhizn'
25 no. 6:17-21 Je '58. (MIRA 11:8)
(Geology, Economic)

PERELMAN, A.I.

26-58-6-26/56

AUTHOR: Perel'man, A.I., Doctor of Geological and Mineralogical Sciences

TITLE: Traces of Ancient Water-Bearing Horizons in Sedimentary Rocks
(Sledy bylykh vodonosnykh gorizontov v osadochnykh porodakh)

PERIODICAL: Priroda, 1958,⁴⁷ Nr 6, p 95-97 (USSR)

ABSTRACT: In Kazakhstan, Central Asia, East Siberia and many other regions of the USSR, so-called "red-colored formations" (sedimentary rocks of various shades of red) are found. These rocks formed in different periods of geological history (from Cambrian to Neogen), especially in the old continents. They are inter-stratified by sandstone, siltstone and sometimes gravel, clay and limestone. Their red color originates from ferrous oxides and hydroxides, which cover the small sand and clay particles with a thin red film. Against the red background, stripes of bluish-green or light grey color can sometimes be observed, which usually consist of sandstone, gravel, etc., their thickness varying between a few centimeters and several meters. On investigating these stripes, the author concludes that in many cases they are white water-bearing horizons and that their original color must have been red. Underground waters were kept

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26-5A-6-26/56

Traces of Ancient Water-Bearing Horizons in Sedimentary Rocks

back in the red formations in former geological epochs and naturally moved through penetrable horizons - sand and gravel - which were enclosed between layers of clay and siltstone. When these waters moved along at great depths, they did not have free oxygen and therefore could not re-establish the ferrous compound, thus leaving almost colorless traces. There are 2 colored plates.

ASSOCIATION: Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii Akademii nauk SSSR (Moskva)
(Institute of the Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry of the USSR Academy of Sciences, Moscow)

Card 2/2 1. Geology-Asla

KOVDA, V.A.; YAKUSHEVSKAYA, I.V.; TYURYUKANOV, A.N.; PEREL'MAN, A.I.,
doktor geologo-mineralog.nauk, otv.red.; YERMAKOV, M.S.,
tekhn.red.

[Trace elements in the soils of the Soviet Union] Mikroele-
menty v pochvakh Sovetskogo Soiuza. Moskva, Izd-vo Mosk.univ.,
1959. 63 p. (MIRA 13:3)
(Trace elements) (Soils)

SOV/25-59-4-5/44

30(1)

AUTHOR: Perel'man, A.I., Doctor of Geological-Mineralogical Sciences

TITLE: The Geochemistry of the Landscape (Geokhimiya landshafta)

PERIODICAL: Nauka i zhizn', 1959, Nr 4, pp 13-16 and p 1 of centerfold (USSR)

ABSTRACT: The author deals with a new branch of science - the geochemistry of the landscape. The bases of this science were developed by the Russian scientist V.V. Dokuchayev, and his followers Academicians L.S. Berg and B.B. Polynov. The essence of geochemistry of the landscape consists in transforming the geographical conditions (by changing the composition of specific chemical elements) and thus developing more favorable circumstances for soil cultivation. On the example of various Soviet landscape categories, such as "poles'ye", "chernozem", salt-march deserts and stunted wormwood regions, the author explains the important consequences and prospects

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The Geochemistry of the Landscape

SOV/25-59-4-5/44

for agricultural utilization of waste and uncultivated land
through the application of geochemical methods. There are
6 sketches and 1 colored illustration.

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3(5)

SOV/11-59-8-2/17

AUTHOR: Perel'man, A.I.

TITLE: Catagenesis

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geologicheskaya.
1959, Nr 8, pp 10 - 19 (USSR)

ABSTRACT: The expression "Catagenesis" was introduced into geochemistry by the late A.Ye. Fersman in 1922 and means "a combination of changes in sedimentary rocks caused by underground waters in a hypergenetic zone which circulate through petrographically and chemically different beds and strata of sedimentary rocks". A peculiarity of catagenesis is its irregular distribution in strata and its association with definite levels, beds and structural lines. Catagenesis develops mainly in water-bearing levels and in zones of their contact with water resistant rocks. Different phenomena of catagenesis were caused by determined chemical elements, which, infiltrating into a given level,

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Catagenesis

SOV/11-59-8-2/17

conditioned the geochemical peculiarity of a given type of catagenesis. The author calls such chemical elements (also ions and chemical compounds) the typomorphic elements. Such elements are free oxygen, CO_2 , H_2S , Cl , SO_4 , Na , Ca and others. He distinguishes two groups of such elements. The first group is composed of typomorphic elements and compounds of aerial migration (oxygen, carbon dioxide, hydrogen sulfide methane, etc.). Their influence on catagenetic processes is very great and in many cases determines the geochemical type of catagenesis. There are 3 basic surroundings in which these processes occur: 1) oxidizing surroundings where water contains free oxygen and catagenesis occurs in conditions of an oxidizing surrounding with all its characteristic geochemical peculiarities. Oxygen is the typomorphic element; 2) reducing surroundings, without H_2S . The water contains large quantities of CO_2 , methane and other hydrocarbons.

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These conditions are favorable for the migration of

Catagenesis

SOV/11-59-8-2/17

iron (Fe^{+2}) and manganese (Mn^{+2}). The migration of iron in reducing surroundings is especially characteristic of marshy soils of humid zones. As a result of this migration the soil acquires a dark-blue or a variegated ochreous-dark blue color. This process is called gleyification (ogleyeniye). Similar processes occur also at great depth, only this change of color is not caused by the superficial soil process (swamping) but by the gleyifying action of the water from ancient water-bearing beds. The CO_2 is the typomorphic element-gas and also partly the hydrocarbon; 3) reducing surroundings, with H_2S . The water does not contain oxygen and other oxidizers, but contains large quantities of H_2S , methane and other hydrocarbons. The difference between the 2nd and 3rd groups consists mainly in the absence or presence of H_2S .

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The second group of typomorphic elements is composed of elements and compounds of water migration infiltrating in form of normal or colloidal solutions (chlo-

Catagenesis

SOV/11-59-8-2/17

rine-ion, sulfate-ion, hydrocarbonate-ion, Ca, Mg, Na, silicon, etc). These typomorphic elements and compounds determine the alkaline-acid conditions and the mineralization of natural waters. Each geochemical type of catagenesis is characterized by a combination of aerial and liquid migrants found together in the water and jointly acting on the rocks. On this basis a geochemical classification of catagenesis (Table 1) can be established. The types of catagenesis are usually well defined in any geological cross-section and often characterized by the color which depends on the accumulation of a specific typomorphic element. The author further describes some of characteristic types of catagenesis and gleyification. The gleyification occurs in non-carbonaceous, as well as in carbonaceous red-colored rocks. In the first case Mg, Ca, Fe, F and other elements are intensively carried away; in the second, the same occurs but to a lesser degree. Fe and Mg from gleyified beds sometimes concentrate in adjacent beds of the same ancient water-bearing level. The gleyification phenomena are character-

Card 4/6

Catagenesis

SOV/11-59-8-2/17

istic for deposits of a cuprous sandstone type associated with the red-colored formations, such as large ore-bodies of Urals, Donbass, Central Asia and the Dzhezkazgan copper deposits. The author states that in the future special attention should be paid to the catagenetic phenomena observed in sedimentary rocks during geological survey and prospecting operations and in lithological research. The study of catagenetic processes will eventually permit the development of prospecting methods which should be called, according to the author, paleohydrochemical methods. The following geologists were mentioned by the author: A.M. Ovchinnikov, V.A. Sulin, F.A. Makarenko, N.M. Surakhov, L.B. Rukhin, D.G. Sapozhnikov, N.V. Logvinenko, L.V. Pustovalov, V.I. Vernadskiy, A.V. Shcherbakov, V.V. Shcherbina and Ignatova. There are 3 tables, 2 diagrams and 17 Soviet references.

Card 5/6

Catagenesis

SOV/11-59-8-2/17

ASSOCIATION: Institut geologii rudnykh mestorozhdeniy, petrografii, mineralologii i geokhimii AN SSSR, Moskva (Institute of Geology of Mineral Deposits, Petrography, Mineralogy and Geochemistry of the AS USSR, Moscow)

SUBMITTED: January 7, 1959

Card 6/6

PEREL'MAN, A.I.

Some problems in the geochemistry of catagenesis in sedimentary
deposits of the "cuprous sandstone" type. Trudy IGEM no.28:
5-21 '59. (MIRA 13:4)
(Copper ores) (Rocks, Sedimentary)

PEREL'MAN, A.I.

Epigenetic changes in sedimentary rocks and their importance for
paleohydrogeological studies. *Biul.MOIP.Otd.geol.* 34 no.4:164-165
Jl-Ag '59. (MIRA 13:8)
(Rocks, Sedimentary)
(Water, Underground)

KRASNIKOV, V.I., otv.red.; SAUKOV, A.A., red.; PEREL'MAN, A.I., red.;
SMIRNOVA, Z.A., red.izd-vs; BYKOVA, V.V., tekhn.red.

[Geological results of applied geochemistry and geophysics]
Geologicheskie resul'taty prikladnoi geokhimii i geofiziki.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane neдр.
(Doklady sovetskikh geologov. Problema 2). Pt.1. [Geochemistry]
Geokhimiia. 1960. 94 p. (MIRA 13:11)

1. International Geological Congress. 21st, Copenhagen, 1960.
(Geochemistry)

PEREL'MAN, A.I.

Geochemical principles in the classification of landforms.

Vest.Mosk. un. Ser. 5: Geog. 15 no.4:3-12 Я - Ag '60.

(MIRA 13:9)

1. Kafedra fizicheskoy geografii SSSR Moskovskogo universiteta.
(Physical geography)

PEREL'MAN, A.I., doktor geol.-mineral.nauk

What is bio-geochemistry? Nauka i zhizn' 27 no.10:28-32 O '60.

(MIRA 13:10)

(Geochemistry)

(Biology)

PEREL'MAN, A.I., doktor geol.-min.nauk

Geochemistry of the White Russian territory. Priroda 49 no.9:106
S '60. (MIRA 13:10)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii
i geokhimii AN SSSR, Moskva.
(White Russia—Geochemistry)

PEREL'MAN, A.I., doktor geol.-mineralog. nauk

Geochemical classification of elements. Priroda 53 no.5:
8-19 '64. (MIRA 17:5)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralologii i geokhimi AN SSSR, Moskva.

~~PERELMAN, A.I.~~; MUSHINA, Ye.A.; TAPCHIYEV, A.V. [deceased]; Prinsipial'noyachastiyev:
KOMOVA, T.A.; SHMONINA, V.L.

Investigating the polymerization of vinylcyclohexane on the
catalytic systems $Al(i-C_4H_9) + TiCl_4$. Plast. massy no.8:3-6
'64.

PEREL'MAN, Aleksandr Il'ich

[Atoms in nature; the geochemistry of the landscape]
Atomy v prirode; geokhimiia landshafta. Moskva, Nauka,
1965. 190 p. (MIRA 18:3)

TOPCHIEV, A.V. [deceased]; MUSHINA, Ye.A.; PEREL'MAN, A.I.; SHISHKINA, M.V.

Relative activity of certain monomers in polymerization on an oxide-chrome catalyst. Neftekhimika 4 no.5:735-740 S-O '64.

(MIRA 18:1)

1. Institut neftekhimicheskogo sinteza imeni A.V.Topchiyeva AN SSSR.

KRASNIKOV, Vladimir Ivanovich (1906-1962), prof., doktor geol.-
miner. nauk; DYUKOV, A.I., otv. red.; KAZHDAN, A.B., otv.
red.; PEREL'MAN, A.I., red.; SHARKOV, Yu.V., red.

[Fundamentals of an efficient method of prospecting for
ore deposits] Osnovy ratsional'noi metodiki poiskov rud-
nykh mestorozhdenii. 2. izd. Moskva, Nedra, 1965. 398 p.
(MIRA 18:12)

A L 10195-66 EWT(m)/EWP(j)/T RM
ACC NR: AP5028543 SOURCE CODE: UR/0286/65/000/020/0159/0159

AUTHORS: Aerov, M. E.; Traynina, S. S.; Smetanyuk, V. I.; Topchiyev, A. V.;
Nikitina, N. N.; Perel'man, A. I.

ORG: none

TITLE: Method for polymerization of olefins. Class 12, No. 147175

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 159

TOPIC TAGS: polymer, polymerization, olefin, catalytic polymerization, catalyst, catalyst regeneration

ABSTRACT: This Author Certificate presents a method for polymerization of olefins on a solid catalyst/dissolved in a solvent. The catalyst is separated from the polymer by dissolving the polymer in a suitable solvent. To carry out the process in one apparatus and to increase the quality of polymer, the process is carried out in a pulsating ascending solvent flow. The temperature of the lower flow section is kept at 80—120C and that of the upper separating section at 140—180C. To increase the degree of separation of catalyst from polymer, the flow velocity in the lower section is larger than in the upper separating section.

SUB CODE: 07/ SUBM DATE: 30Mar61

Cord 1/1

VINOGRADOV, A.P.; KORZHINSKIY, D.S.; SMIRNOV, V.I.; SHCHERBAKOV, D.I.;
AYDIN'YAN, N.Kh.; VINOGRADOV, V.I.; VOL'FSON, F.I.; GENKIN, A.D.;
DANCHEV, V.I.; LUKIN, L.I.; OZEROVA, N.A.; ~~PERELMAN~~, A.I.; REYKHARSKIY,
V.I.; SMORCHKOV, I.Ye.; FEODOT'YEV, K.M.; SHADLUN, T.N.; SHIPULIN, F.K.

Aleksandr Aleksandrovich Saukov, 1902-1954; obituary. Geol. rud. mestorozh.
7 no.1:124-125 Ja-F '65. (MIRA 18:4)

AKHMEDELI, T.M.; PEREL'MAN, A.I.

Structure and some properties of trans-1,3-pentadiene polymers
obtained on a chromium oxide catalyst. Vysokom. soed. 8 no. 1:
61-64 Ja '66 (MIRA 19:1)

1. Institut neftekhimicheskogo sinteza AN SSSR. Submitted
February 12, 1965.

BATULIN, S.G.; GOLOVIN, Ye.A.; ZELENKOVA, O.I.; KASHIRTSEVA, M.F.;
KOMAROVA, G.V.; KONDRAT'VEVA, I.A.; LISITSIN, A.K.;
PEREL'MAN, A.I., doktor geol.-miner. nauk; SIDEL'NIKOVA, V.D.;
CHERNIKOV, A.A.; SHMARIOVICH, Ye.M.; MURADOVA, A.A., red.

[Exogenetic epigene uranium deposits; conditions governing
their formation] Ekzogennye epigeneticheskie mestorozhdenia
urana; uslovia obrazovaniia. [By] S.G.Batulin i dr. Moskva,
Atomizdat, 1965. 323 p. (MIRA 18:5)

L 17086-65 EWT(m)/EPP(c)/EWP(j)/T PG-4/Pr-4 RM

ACCESSION NR: AP4047685

8/0204/64/004/005/0735/0740

AUTHOR: Topchiyev, A. V. (Deceased); Mushina, Ye. A.; Perel'man, A. I.; Shishkova, M. V.

TITLE: Relative activity of some monomers in the polymerization reaction on a chromium oxide catalyst

SOURCE: Neftekhimiya, v. 4., no. 5, 1964, 735-740

TOPIC TAGS: vinylcyclohexane, allylcyclohexane, allylbenzene, phenylbutene, phenyl pentene, polymerization catalyst, chromium oxide catalyst, aromatic polymer

ABSTRACT: The polymerizability of monomers containing naphthene and other aromatic rings in the presence of a chromium oxide catalyst was investigated in relation to their structure. The polymerization rate at different temperatures at a monomer concentration of 0.0022-0.0024 mole/ml in heptane, and with 10% catalyst by weight, was plotted in relation to the total amount of monomer and solvent. On the basis of these curves, the velocity constants and initial velocities were determined. The total activation energy was found to be about 12.5 kcal for all monomers even though the velocity values vary over a wide range. According to the kinetic characteristics, the relative activity of the monomer decreases if the naphthene ring is replaced by benzene and the vinyl group approaches the ring: allylcyclohexane > vinylcyclohexane > 3-phenyl-1-pentene > 4-phenyl-1-butene > allyl

L 17086-64

ACCESSION NR: AP4047685

benzene. The relative activity of the monomers is increased by the removal of the vinyl group from the ring because the side chain becomes more flexible and the orientation of the monomer molecules on the surface of the catalyst favors the reaction of the vinyl group with the surface of the catalyst. The properties of the resulting polymers are tabulated. The relative activity was also increased in the presence of a chromium oxide catalyst or by the replacement of the benzene ring with cyclohexane. The isomerization of the monomer, proceeding as a side reaction parallel to the polymerization in the presence of a chromium oxide catalyst, was also investigated. The structure of the monomers before and after polymerization was investigated by their infrared spectra. With increasing temperature of polymerization of vinylcyclohexane, the isomerizing effect of the chromium oxide catalyst increased. "The authors express their gratitude to I. Yu. Tsarevskaya for the determination of the glass transition and melting points of the polymers and to A. T. Svyatoshenko for determining the composition of the isomerization product by capillary chromatography. T. A. Komova also took part in the experimental work." Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR
(Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 020ct63

ENCL: 00

SUB CODE: GC, CC

NO REF SOV: 007

OTHER: 008

Card

2/2

~~TOPCHIEV, A. I.~~ PEREL'MAN, A. I.

chemistry

AUTHORS: Topchiyev, A. V., Krentsel', B. A., Perel'man, A. I., 74-12-1/L
(Moscow).

TITLE: Polymerization of Olefins into High-Molecular Products by Means of
Oxide Catalysts (polimerizatsiya olefinov v vysokomolekulyarnyye
produkty na okisnykh katalizatorakh).

PERIODICAL: Uspekhi Khimii, 1957, Vol. 26, Nr 12, pp. 1355-1373 (USSR).

ABSTRACT: This paper contains all data concerning the catalytic effect of metal
oxides in the polymerization of olefins. Oxides and mixed oxides of
the VI., VII, and VIII. sub-group of the periodical system appear to
be the most suitable. As carrier substances silicagel, kieselgur,
aluminosilicates, $\gamma\text{-Al}_2\text{O}_3$, and active coal are used.

Also aluminosilicates have a catalytic effect, as e. g. floridine.
The catalytic properties found to exist at different conditions have
been compiled from the passages referred to.

Nickel- and cobalt oxide catalysts, their production and possibili-
ties of application are dealt with in the following.

A larger part of the paper deals with the catalytic effect of chro-
mium oxide catalysts. A paper by T. Rode on the Cr - O - phases is
dealt with in detail (reference 25). The dependence of the molecular
weight of the reaction products on pressure and temperature is gra-

Card 1/3

Polymerization of Olefins into High-Molecular Products by Means of Oxide Catalysts. 74-12-1/1

phically represented; the mechanic and chemical properties of the polymerides and mixed polymerides obtained of ethylene, propylene, etc. are compared in the table with other artificially produced substances as e. g. with polyvinylchloride and the American product marlex(marleks).

In the following molybdenum oxides and mixtures of molybdenum oxide with copper-, zinc-, nickel-, and cobalt- oxides are mentioned as catalysts and shortly discussed.

The effect produced by catalysts can be improved by the addition of metal hydrides. For this purpose the hydrides of alkalis and alkaline earths lithium "alkanate" and the boron hydrides of lithium, sodium, magnesium and aluminum. In connection with boron fluoride also metal fluorides can catalyze the polymerization reaction of the olefins.

Nothing exact is hitherto known concerning the mechanism of oxide catalysis; a comparison between the efficacy of the various oxides showed that the oxides of the V - VIII sub-group are particularly suited for this purpose. The catalyst effect can be considerably reduced by the treatment with hydrogen at 500°C. The ideas expressed by G. Natta (reference 37) concerning the mechanism of the polymerization reaction are given.

Card 2/3

Polymerization of Olefins into High-Molecular Products by Means of Oxide Catalysts. 74-12-1/1

There are 6 figures, 6 tables, and 73 references, 20 of which are Slavic.

AVAILABLE: Library of Congress.

1. Olefins-Polymerization 2. Metal oxides-Catalytic effects

Card 3/3

FERELMAN, A. I., MIYESSEROV, K. G., TOPCHIYEV, A. V., and KREISEL, B. A.,

"On the Question of Applying Chromium Oxide or Molybdenum Oxide Catalysts to Obtain Crystalline Poly-Q-olefins," paper No. N , submitted at the International High-Polymer Conference, Nottingham, 21-24 July 1958.

Akademiya Nauk SSSR, Leninskiy Prospekt 14, Moscow, USSR

Translation of Russian

5(3)
AUTHORS:

SOV/62-59-2-35/40
Topchiyev, A. V., Krentsel', B. A., Perel'man, A. I.,
Smetanyuk, V. I.

TITLE:

Polymerization of Ethylene on the Chromium-oxide Catalyst at
Atmospheric Pressure and in the Absence of a Solvent
(Polimerizatsiya etilena na okisnokhromovom katalizatore pri
atmosfernom davlenii i v otsutstviye rastvoritelya)

PERIODICAL:

Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk,
1959, Nr 2, pp 365-366 (USSR)

ABSTRACT:

The authors report in the present news in brief that they suc-
ceeded in obtaining polyethylene on the chromium-oxide catalyst
at atmospheric pressure and without a solvent at 110-180°. The
yield of the polymer depends on temperature and on the time of
contact of ethylene with the catalyst (Figs 1,2). A polymer
with the melting point of 123-137° and η_{sp} 0.4 - 0.5 was ob-
tained. Low-molecular (liquid) reaction products could not be
detected. On the polymerization of ethylene without pressure
but in the presence of a solvent no polymer was formed. The
oxygen content in ethylene (0.3-0.4%) did not influence poly-

Card 1/2

SOV/62-59-2-35/40

Polymerization of Ethylene on the Chromium-oxide Catalyst at Atmospheric Pressure and in the Absence of a Solvent

merization; at pressure, on the other hand, and in the presence of the solvent (according to data of publications) the admissible quantity of oxygen is considerably smaller. Under identical conditions also polypropylene was obtained. It could be found that on polymerization under pressure and in the presence of a solvent the activity of the chromium-oxide catalyst is connected with the presence of chromium-oxides of the valences between Cr^{VI} and Cr^{III} . The chromium-oxide catalyst which contained only Cr_2O_3 without Cr^{VI} also did not polymerize ethylene and propylene in experiments without pressure and solvent. There are 2 figures and 3 references, 2 of which are Soviet.

ASSOCIATION: Institut nefiti Akademii nauk SSSR (Petroleum Institute of the Academy of Sciences, USSR)

SUBMITTED: July 15, 1958

Card 2/2

5 (3,4)

AUTHORS:

Topchiyev, A. V., Krentsel', B. A., SOV/62-59-6-20/36
Perel'man, A. I., Rode, T. V.

TITLE:

Chromium Oxide Catalysts for the Polymerization of Ethylene
(Okisnokhromovyye katalizatory dlya polimerizatsii etilena)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 6, pp 1079 - 1087 (USSR)

ABSTRACT:

By way of introduction the chromium oxide catalysts which are successfully used for the polymerization, and which are mentioned in publications are enumerated. (Refs 1-4,5). The strong catalytic effect exercised by these catalysts is based upon the readiness of chromium to pass over from one valence stage into another. In the present investigation the composition, the physico-chemical properties, and the dependence of the activity upon the production method of the catalysts, which were produced by impregnation of the aluminum silicate with CrO_3 and chromium nitrate with successive activation at high temperatures, was investigated. Chromium, which is otherwise reduced at high temperatures from $\text{Cr}^{(\text{VI})}$ to $\text{Cr}^{(\text{III})}$ remains in aluminum

Card 1/4

Chromium Oxide Catalysts for the Polymerization of
Ethylene

SOV/62-59-6-20/36

silicate almost completely as Cr^{VI} . This was proved by investigating the thermogram of the catalysts (method according to Balandin and Rode Ref 6), which exhibited an exothermal effect (Tables 2,3) which is caused by the interaction of CrO_3 and aluminum silicate, and by which the Cr^{VI} on aluminum silicate when heating to 350° is preserved. The dependence of the activity of the catalyst was investigated with an aluminum silicate which was impregnated at first with CrO_3 and then with chromium nitrate. Apart from the chemical analysis also the weight, the specific weight, and the porosity of the catalyst was determined. Its activity was determined by the quantity of the solid polymer formed. Furthermore, the influence of the activation temperature on the composition of the catalyst was studied. (Table 1). Here it was found that the lower the activation temperature is (300°), the higher is the portion of Cr^{VI} . The catalyst, however, remains inactive because of the water still combined with the aluminum silicate. The activation temperature had therefore to be chosen in such a way that the de-

Card 2/4

Chromium Oxide Catalysts for the Polymerization of Ethylene SOV/62-59-6-20/36

hydration of the aluminum silicate took place while on the other hand the Cr^{VI} content in the catalyst remained almost unreduced. This was possible in a vacuum at 350° . Furthermore, a connection between the beginning of the active effect of the chromium catalyst and the formation of intermediate chromium oxides at 350° was found. Finally, the influence exerted by carrier substances on the activity of the chromium catalyst was investigated, and experiments with aluminum silicate, silica gel, aluminum oxide, and activated coal were carried out. Aluminum silicate and silica gel proved to be the best carriers for CrO_3 . The action of chromium catalysts as polymerizers is based upon their high sorption capability and the readiness of being reduced under the influence of high temperatures and in presence of hydrocarbons. The regeneration of the catalysts was also investigated. There are 7 figures, 5 tables, and 6 references, 2 of which are Soviet.

Card 3/4

Chromium Oxide Catalysts for the Polymerization of Ethylene SOV/62-59-6-20/36

ASSOCIATION: Institut nefi Akademii nauk SSSR (Petroleum Institute of the Academy of Sciences, USSR)

SUBMITTED: October 4, 1957

Card 4/4

5(3)

SOV/62-59-7-35/38

AUTHORS:

Topchiyev, A.V., Perel'man, A. I., Smetanyuk, V. I.,
Krentsel', B. A.

TITLE:

The Synthesis of Polypropylene on Chromium Oxide Catalyst (Polu-
cheniye polipropilena na oksido-khromovom katalizatore)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk.
1959, Nr 7, pp 1346-1349 (USSR)

ABSTRACT:

A brief introduction is given concerning the data found in publi-
cations concerning the production of the compound mentioned in
the title with chromium oxide catalysts (Refs 1-4). The present
paper deals with the investigation of the influence on the poly-
merization of propylene on chromium oxide by the addition of
 $Al(alkyl)_3$. The experiments were carried out by A.N. Tsymba at the
Institute mentioned in the Association. Without addition of
 $Al(alk)_3$ 90% crystalline polypropylene was obtained with but a low
yield. The reaction in an autoclave took place at a temperature of
 105° and a pressure of 25-30 atm and lasted 4-5 hours. The poly-
mers obtained were investigated radiographically and thermally.

Card 1/2

The Synthesis of Polypropylene on Chromium Oxide
Catalyst

SOV/62-59-7-35/38

nically. The thermomechanical analysis was made by I. Yu. Marchenko. The table shows the characteristics of the polymers and secondary products. The yield of solid polymer was found to increase with rising ratio Al/Cr (Fig 1). Thermomechanical investigations further revealed that the polypropylene obtained is a solid crystalline substance at 130°, whereas it becomes viscous at temperatures of 150°. There are 2 figures, 1 table, and 3 references, 3 of which are Soviet.

ASSOCIATION: Institut nefiti Akademii nauk SSSR (Institute of Petroleum of the Academy of Sciences, USSR)

SUBMITTED: January 19, 1959

Card 2/2

PEREL'MAN, A. I., TOPCHIEV, A. V., KRENTZEL, B. A. and MUSHIN^A, Ye. A. (USSR)

Sintez kristallicheskovoc poliviniltsiklogeksana
Synthesis of crystalline polyvinylcyclohexane
IUPAC S I:118-2^L

report presented at the Intl. Symposium on Macromolecular Chemistry, Moscow,
14-18 June 60.

67572

5.3831

5(3)

AUTHORS:

SOV/20-130-2-28/69
Topchiyev, A. V., Academician, Mushina, Ye. A., Perel'man, A.
I., Krentsel', B. A.

TITLE:

Synthesis of Polyvinylcyclohexane¹

PERIODICAL:

Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 2,
pp 344 - 345 (USSR)

ABSTRACT:

There are no publication data on the polymerization of the vinyl derivatives of cyclohexane. Therefore, the authors wanted to investigate the possibility of producing polyvinylcyclohexane, and the influence of the nature of the catalyst on the properties of the polymer. Vinylcyclohexane was obtained from the cyclohexylethyl alcohol (Ref 1, see Scheme). This alcohol was synthesized in 2 ways: I) by the action of an absolutely dry gaseous ethylene oxide on magnesium chlorocyclohexane (produced by the Grignard reaction) in ethereal solution (Refs 2,3); II) by hydrogenation of phenylethyl alcohol on Raney's nickel catalyst at 160° and a pressure of 100 atm. The yield was ~ 50%. Vinylcyclohexane was obtained by acetylation of the cyclohexyl alcohol and by pyrolysis of the acetate (Ref 1). 2 catalysts

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Synthesis of Polyvinylcyclohexane

SOV/20-130-2-28/69

were used for the polymerization of the vinylcyclohexane: a) a chromic-oxide-, and b) an organo-metallic catalyst. Carefully dehydrated heptane or benzene was used with a) as a solvent for the monomer. The authors' experiments showed that an addition of triisobutyl aluminum (50% solution in heptane) doubles the polymer yield. The properties (crystallinity, viscosity, etc) remain unchanged (Fig 1 a, b, p 318). The polymerization b) was carried out in a current of purified nitrogen at 80°. Triisobutyl aluminum with titanium tetrachloride was used as a catalyst. According to preliminary data, the polymer yield was ~ 30%. No ash content was found in the product polymerized on the chromic-oxide catalyst. The product polymerized on $(\text{iso-C}_4\text{H}_9)_3\text{Al}^+$ + TiCl_4 contains 1% of ashes. Polyvinylcyclohexane is a white, finely-disperse powder melting at 325°, and soluble in organic solvents. The characteristic viscosity was different depending on the nature of the catalyst used: it was 0.5 for a), and 1 - 1.5 for b). The elementary analysis in % yielded: C 87.22 (computed 87.27); H 12.80 (computed 12.72). The roentgenograms showed a high crystallinity of

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Synthesis of Polyvinylcyclohexane

SOV/20-130-2-28/69

the polymer (Fig 1). Finally, the authors give a scheme for the presumable structure of the polymer. No by-products of the reaction were ascertained in the polymerization mentioned. There are 1 figure, 1 table, and 7 references, 6 of which are Soviet. ✓

SUBMITTED: September 3, 1959

Card 3/3

TOFCHYEV, A.V. (born 1941); SEPTIMOVA, V.I.; KIRILIN, I.I.

Polymerization of styrene in the presence of nickel catalyst. Plast.
massy no. 7, p. 3, 1966. (MIRA 17:10)

ACCESSION NR: AP4043316

: 8/0191/64/000/008/0003/0306

AUTHOR: Perel'man, A. I., Mushina, Ye. A., Topchiyev, A. V. (deceased)

TITLE: Investigation of the polymerization of vinylcyclohexane on the catalytic system triisobutylaluminum plus titanium tetrachloride

SOURCE: Plasticheskiye massy*, no. 8, 1964, 3-6

TOPIC TAGS: vinylcyclohexane, polyvinylcyclohexane, polymerization, polymerization catalyst, triisobutylaluminum, titanium tetrachloride, Ziegler Natta catalyst

ABSTRACT: The polymerization of vinylcyclohexane (99.7 - 99.8% pure) on the catalytic system $Al(i-C_4H_9)_3 + TiCl_4$ was studied in a glass reaction vessel (dilatometer) in an atmosphere of pure dry nitrogen and a purified solvent (heptane or benzene) over a temperature range of 60-85°C. The synthesis of vinylcyclohexane is also discussed. The experimental data showed that the optimum molar ratio of the catalyst components with respect to the yield and specific viscosity of the polymer is 1:1. On increasing the concentration of catalyst from 1 to 3%, the rate of polymerization increases and the specific viscosity decreases. An increase in the concentration of vinylcyclohexane in heptane leads to an increase in both the rate of polymerization and specific viscosity. On increasing the

Cord 1/3

ACCESSION NR: AP4043316

temperature of polymerization from 60 to 80C, the specific viscosity decreases. The yield of polyvinylcyclohexane was about 50% (based on the monomer used). The experimental data showed that the polymerization of vinylcyclohexane with this catalytic system proceeds in the same way as the polymerization of other monomers with naphthene and aromatic rings on catalysts of the Ziegler-Natta type. The resulting polymer has a wide range of processing temperatures. The glass temp. = 09C, melting point = 325C. Polymerization in benzene or cyclohexane, which dissolve polyvinylcyclohexane readily, yields an amorphous polymer which behaves as a crystalline polymer during thermomechanical and thermographic analyses. Polyvinylcyclohexane has excellent dielectric properties; the dielectric loss value of 6×10^{-4} remains unchanged up to 200C. Polymerization on the $Al(i-C_4H_9)_3 + TiCl_4$ system is accompanied by isomerization of the monomer to ethylidenecyclohexane, which leads to a decrease in the polyvinylcyclohexane yield. "The authors express their gratitude to V. A. Kargin for his valuable advice during the experimental work, to G. P. Mikhaylov, N. A. Nechitaylo, M. V. Shishkina and I. Yu. Tsarevskaya for their assistance in the investigation of the structure and properties of the polymers, and to D. V. Mushenko, E. G. Lebedeva and V. S. Chachina for supplying the vinylcyclohexane; the average molecular weight of the polyvinylcyclohexane was determined by E. A. Razumovskaya, the presence of ethylidenecyclohexane was determined by A. T. Syatoshenko using capillary chromatograph, and T. A. Komova and V. L.

Card

2/3

ACCESSION NR: AP4043316

Shmonina also took part in the work." Orig. art. has: 11 figures and 3 formulas.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 016

OTHER: 010

Cord 3/3

PEREL'MAN, A.I., doktor geol-mineral. nauk

Dialectics of the development of a natural landscape. Priroda
54 no.3:37-49 Mr '65. (MIRA 18:4)

PEREL'MAN, A.I., doktor geol.-mineral.nauk (Moskva)

Geochemistry of "hypergenesis"; migration of atoms in the upper part
of the earth's crust. Priroda 54 no.2:119-120 F '65.

(MIRA 18:10)

FEREL'MAN, Aleksandr Il'ich; BAROYANTS, S.G., red.

[Geochemistry of epigenetic processes; supergene zone]
Geokhimiia epigeneticheskikh protsessov; zona gipergeneza.
Moskva, Nedra, 1965. 271 p. (MIRA 18:7)

1. 50190-65 EPA(s)-2 /EWT(m)/EPT(n)-2/T/EWP(t)/EWP(b)/EWA(c) Pu-4
IJP(c) WVH/ES/JD/WV/JG

AM5014982 BOOK EXPLOITATION UR/553.061:546.79

Datulin, S. G.; Golovin, YE. A.; Zelenova, O. I.; Kashirtseva, M. V.;
Komrova, G. V.; Kondrat'yeva, I. A.; Lisitsin, A. K.; Perel'man,
A. I.; Sindel'nikova, V. D.; Chernikov, A. A.; Shmarlovich, YE. M.

Exogenous epigenetic deposits of uranium; formation conditions
(Ekzonennyye epigeneticheskiye mestorozhdeniya urana; usloviya
obrazovaniya). Moscow, Atomizdat, 1965. 321 p. illus., biblio.
Errata slip inserted. 1100 copies printed.

TOPIC TAGS: deposit formation, epigenetic theory, exodiagenetic
deposit, surface uranium accumulation, uranium bituminous deposit,
uranium deposit, uranium, nuclear fuel. 19

PURPOSE AND COVERAGE: This book is intended for readers specializing
in the geology of ore deposits, in particular for those concerned
with atomic raw materials, and also for students of higher-education
institutions. In the book, for the first time in Soviet and
foreign literatures, the epigenetic theory of uranium-deposit
formation is expounded. Many Soviet and foreign source materials

Cord 1/4

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13

have been used in this book, and some of the investigations carried out by the present authors are published in this book for the first time. Several names of Soviet scientists working in this field are mentioned. V. A. Uspenskiy collaborated on Ch. I, and M. A. Viselkina on Ch. III. The authors thank A. A. Saikov, deceased, Corresponding Member Academy of Sciences USSR, and F. I. Vol'fon, D. G. Sapozhnikov, V. I. Gerasimovskiy, M. P. Strckin, G. S. Gritsavenko, and I. P. Kushnarev, Doctors of Geologico-Mineralogic Sciences; V. I. Danchev, Candidate of Geologico-Mineralogic Sciences, and N. A. Volokovykh. There are about 12 pages of references of which about 3/4 are Soviet.

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AH5014982

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AVAILABLE: Library of Congress

SUB CODE: ES

SUBMITTED: 04Feb63

NO REF SOV: 188

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Cord 4/A

KRASNIKOV, Vladimir Ivanovich (1906-1962). SURAZHSKIY, D.Ya., doktor
geol.-m.n.nauk, otv. red.; PEREL'MAN, A.I., doktor geol.
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(Krasnikov, Vladimir Ivanovich, 1907-1962)

J. 17235-63 BDS/EWP(j)/EPF(c)/EWP(q)/EWT(m)/FCS(f)--ASD--Pc-4/
Pr-4--RM/WH/JD

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TITLE: Polymerization of olefins on chromium oxide catalysts. 7
Polymerization of propylene 7

SOURCE: Plasticheskiye massy*, no. 9, 1963, 4-9 27 27

TOPIC TAGS: polyolefins, olefins, olefin polymerization, polymerization, polypropylene, isotactic polypropylene, crystalline polypropylene, amorphous polypropylene, propylene, propylene polymerization, condition, polymerization condition, propylene polymerization condition, pressure, solvent, triisobutylaluminum, chromium oxide, chromium oxide catalyst, silica gel, silica gel carrier, carrier, catalyst activation, reaction time, yield, polymerization rate, intrinsic viscosity, copolymerization, autocopolymerization, continuous polymerization, propylene continuous polymerization, batch polymerization, property modification

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ABSTRACT: The effect of reaction conditions on the yield and structure of polypropylene (PP) prepared by the polymerization of propylene over a chromium oxide catalyst has been studied, and highly crystalline, isotactic PP has been prepared. The polymerization was conducted in such solvents as cyclohexane, heptane, or toluene at 105C, batchwise in an autoclave at 0—35 atm gage or continuously in a glass flow reactor at atmospheric pressure, in the presence of triisobutylaluminum and chromium oxide catalyst (0.5—8% Cr) on silica gel carrier (Al/Cr ratio, 0/1—5/1), for 1—7 hr. Based on a preliminary investigation, reaction conditions selected were as follows: catalyst activated in vacuum (10^{-2} mm Hg) at 350C; solvent such as cyclohexane or heptane (rather than toluene); Cr on silica gel, 3%; Al/Cr ratio, 3/1; and autoclave pressure, 30 atm gage. Under these conditions the effect of reaction time on the yield of crystalline PP, amorphous PP, dimer, and olefins above C_6 and on the rate of formation and intrinsic viscosity of crystalline and amorphous PP was studied. As Fig. 1 of the Enclosure indicates, the yield of olefins above C_6 first increases with time, then drops after about 5 hr, at which time

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the yield of dimers and amorphous PP rises sharply. These yield changes suggest that the α -olefins copolymerize with propylene to form amorphous PP. Such "autocopolymerization" can be used to modify the properties of a number of polyolefins, e.g., to improve elasticity and flexibility. The buildup of liquid products (γ - and β -olefins) in the reaction mixture with time (see Fig. 1) leads to catalyst deactivation, which in turn decreases the high-molecular polymerization rate. Hence, removal of liquid products from the reaction zone should lead to a marked increase in this rate. This effect was evidenced by the flow-reactor polymerization, in which liquid oligomers were continuously removed along with propylene: as compared to autoclave polymerization at low pressures, the yield of crystalline PP is higher (1.05 g/g catalyst at 6 hr reaction time as against about 0.8 g/g catalyst at 10 atm gage), and that of amorphous PP, 50% lower. It is concluded that the only promising production process for making crystalline PP using chromium oxide catalyst is continuous polymerization.

ASSOCIATION: none

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